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On cereal crops in the Middle Bronze Age Jazīrah and the meaning of *burrum*

In agricultural nomenclature, Akkadian *burrum* is commonly translated as ‘wheat’ (French *froment*). The now dated entry in CAD (B, 330) identifies it as a ‘cereal’ and further notes that it is commonly written bu-rum (BU.AŠ) and only rarely syllabically (*bu-ur-rum* or *bu-ru*). Though the entry was based on references from Mari, examples from elsewhere in the Jazīrah demonstrate similar preferences. We thus find bu-rum (KTT 110 and KTT 124), *bu-ri* (KTT 120) and *bu-ra-am* (KTT 142) at Tall Bī’a (Tuttul), bu-rum (OBTCB 104) at Tall Šāghir Bāzār (Ašnakkum), bu-rum (OBTR 181, 184, 185, 322) and bu-rum-*ra-am* (OBTR 299) at Tall al-Rimah (Qaṭṭara), and finally bu-rum at Tel Aḡana (Alalah) (ATaB 22.05).

A fairly recent article on agricultural practices and crop regimes of the Early and Middle Bronze Age dry-farming plains proposed Sumerian sig15 (KAL) to be a cognate of Akkadian *burrum*, and to associate both terms with the tetraploid variety of free-threshing wheat (*Triticum durum*) (Riehl *et al.* 2012, 126-127, drawing on Widell 2003, 724). Understanding *burrum* as a type of wheat is not new (see Bottéro 1957, 252-253, also Birot 1964, 6), yet I argue in the following firstly that sig15 and *burrum* are not cognates, secondly that *burrum* is not wheat, but rather a stage of pre-storage cereal processing, potentially dehushing.

The supposed identification of sig15 as durum wheat apparently do not consider Archi’s sound arguments for associating sig15 with einkorn (*Triticum monococcum*) (Archi 1999, 322-323, Marchesi 2013, 280-281). Einkorn is well represented in samples from Tall Mardīkh (Ebla) (e.g. Wachter-Sarkady 2013, Table 23.23), and I see little reason to doubt this identification, neither in terms of taxonomy with regards to cereal terminology, nor in terms of the relative frequency of barley, emmer, free-threshing wheat, and einkorn in the botanical samples. As einkorn is barely present in Middle Bronze Age botanical samples, let us assume *burrum* released from its asserted link to sig15 and then consider the former on its own terms.

First, we should note that the common terms for emmer wheat (*Triticum dicoccum*) and free-threshing wheat (*Triticum aestivum*) are both present in cuneiform assemblages from our area and period of concern, namely as ziz2 (*zīzum* or *kunšum*) and gig (*kibtum*) respectively. At Qaṭṭara, *burrum* appears alongside emmer in a standard disbursement record (OBTR 181 (v.01) 8 anše 4 ban2 bu-rum (v.02) 2 anše 4 ban2 ziz2-*zu-um ki-nu*). At Tuttul, an issue of free-threshing wheat, written še-gig, appears in KTT 111, from the same context as KTT 120 (see below). At Alalah, a purchase document includes an amount of barley (še) and *burrum* (bu-rum). Emmer is amply documented at Alalah as ziz2. Thus, if *burrum* is a species of wheat, its association with either of the two major wheat taxa cultivated in the region is hardly straightforward. As a related point, we should remember that terminological distinction between hulled and naked wheat in ancient sources is often closely related to visual properties following threshing, even though the botanical taxon may

be largely the same (Zohary *et al.* 2012, 24). An Akkadian cognate for *ziz2* appearing in lexical lists is *kiššātu*, which also means ‘whole’ or ‘totality’. Akkadian *kibtu*, for Sumerian *gig*, draws on the same semantic root as *kabātu*, ‘to become heavy’, *kabattu*, ‘inside’, and *kibittu*, ‘main body’ or ‘strength’. While I have no intention of arguing against the association of these terms with specific botanical taxa at a general level, I do wish to stress that the means of signification in Akkadian nomenclature leaves us with less clear-cut categories than those suggested by biology.

Second, some observations on quantities; the largest single amount of *burrum* known to me appears in KTT 120 from Tuttul, an account of harvest yields from fields in the valleys of the Euphrates and the lower Balīkh. As discussed by Krebernik (1993, 52-53), *burrum* is received in fixed ratios of 2 to 1 against select quantities of barley (*še*). It is, of course, possible that *še* is used here in a generic sense and so may encompass other cereal taxa, but it is also worth noting that the aggregate total of *burrum* received amounts to some 48 tonnes, or 4.5% of all the grain accounted for in the text, while no mention is made of either emmer or free-threshing wheat. Similarly, a fragmentary disbursement record from Ašnakkum is concerned with 40 donkey-loads (c. 3 tonnes) of *burrum* (OBTCB 104), a substantial amount for a single transaction even if constituting a mere percentage of annual agricultural output. The aggregate amount of *burrum* appearing in records from Mari, too numerous to cover here, suggests a corresponding abundance compared to emmer and free-threshing wheat.

Third, we should reiterate the pertinent archaeobotanical horizon. A study by van Zeist and Bottema underscores the predominance of barley in the Balīkh Valley throughout the Bronze Age, with barley at a minimum 80% majority against all wheat species combined (van Zeist 1999, 31 and Fig. 36). This pattern is confirmed on a larger scale by Riehl (see e.g. Riehl 2009, 2010), who demonstrates a clear predominance of barley with small contingents of emmer and free-threshing wheat across the Jazīrah. In sum, if assuming *burrum* to be a specific cereal taxon, contextual information does not support an identification as either emmer or free-threshing wheat, and leaves us little in the way of other suitable candidates. And yet, *burrum* appears in relatively large amounts in the texts compared to the former two cultivars.

Some further notes on characteristics; it follows from administrative records that *burrum* can be received directly from the threshing floor (e.g. at Tuttul, see KTT 120) and issued as *burrum* from granaries (e.g. at Qaṭṭara, see OBTR 181, 184, and 185). It can also be clearly distinguished at the level of cultivation, or derived end product, e.g. in a letter where the sender rhetorically asks: “who will cultivate the barley and the *burrum*?” (OBTR 299 (v.07) *še-e ù bu-rum-ra-am* (r.01) *ma-an-nu i-ir-ri-iš*), and in a rather obscure division between *še* and *bu-rum* in the field inventory OBTR 322. The word was common enough to be incorporated into professional designations, e.g. the ‘gatherers of *burrum*’ or ‘gleaners’ (*lāqit burrim*) found among milling men and women at Ašnakkum (OBTCB 67, 75, 80, 86) and Tuttul (KTT 287). Finally, an entry in an administrative text from Mari may indicate that *burrum* is a derived

product of free-threshing wheat (ARM 12, 697 v.03: 5 ½ gur bu-rum ša ka-ba-tum). Again, if *burrum* was a taxon, it fails to fall into place among the three known major cereal crops found in the Middle Bronze Age record from the Jazīrah. In quantitative terms it is, however, far from ephemeral to the general grain economy.

If *burrum* is a property rather than a species, let us look at the agricultural *chaîne opératoire*. Krebernik some time ago suggested *burrum* to signify barley at a threshed or cleaned stage – “vielleicht also die von Spreu gereinigte Gerste” (1993, 52-53). Ethnographic examples as well as the archaeological and textual record should lead us to expect hulled cereals to be stored in spikelet form, thus threshed and winnowed, but not necessarily cleaned or dehusked (Halstead 2014, 178). Krebernik drew here on the same etymology as that discussed by Bottéro, namely the association of *burrum* with Arabic *burr* (بُر) and Hebrew *bar* (בָּר), which the latter author translates as ‘froment’ and “grain-séparé-par-l’effet-du-battage” respectively (1957, 252-253). According to Dalman, *būr* means ‘wheat’ (but also ‘wild’) in several dialects, but it is worth stipulating that it relates generically to several types of free-threshing wheat, not hulled varieties, and so may emphasize naked grains over hulled grains (e.g. Dalman 1928-42, Vol. II, 246-247). The latter author also discusses the verb *bārar* (בָּרַר), but here it is understood as ‘to clean’ or ‘to hand-pick (grain)’ (Ger. *reinigen* or *auslesen*, cf. Dalman 1928-42, Vol. II, 147 and 279-280). There are no obvious links between these and Akkadian *barārum*, but one might instead venture *bērum* (‘to select’) and especially *barûm* (‘to see, look at’, consider here the comparable morphology of e.g. *darûm* ‘to last forever’ and *dūrum* ‘permanence’). Apart from threshing and winnowing (Akk. *diāšum* and *zarûm* respectively), the only other specific term relating to pre-storage treatment of cereals in the Middle Bronze Age Jazīrah that I know of is Assyrian *zakûm* (‘to clear’ or ‘to clean’), which appears occasionally in Mari letters in a variety of contexts, related both to ritual cleansing, metalwork, cereals, and fields. I have not come across it in administrative sources related to grain, however, though letters mention ‘cleaned grain’ (*še’um zakûtum*) being taken from the threshing floors to grain storages (e.g. ARM 27, 37 and ARM 6, 37 discussed by Durand 1998, 326-327). Returning again to ethnography, cereals are subjected to several rounds of cleaning, also by hand, after winnowing (Hillman 1984, 128-133). Archaeological examples demonstrate that cereals could also be kept in various states of cleaning and dehusking, with larger or smaller amounts of chaff, weeds, and impurities found in even quite proximal samples (e.g. at Brak, see Hald and Charles 2008, S38-S40). Considering the dearth of specific terms for cleaned or dehusked grain, *burrum* may fit a semantic niche that we should, at any rate, expect to appear at least ephemerally in the textual record.

All of this naturally leaves us little in terms of firm answers, but I would reiterate again the problems associated with a translation of *burrum* as a type of wheat; the term is often associated with barley (e.g. KTT 120), and patently not synonymous to common words for emmer and free-threshing wheat on present evidence. It is, however, relatively common when considering the amounts in which it appears, and can apparently be collected around a grindstone, if allowing for a literal reading of *lāqit burri*. Drawing on ethnographic comparison and an alternative etymology, I

would suggest *burrum* to signify either handpicked or dehusked cereal grain, rather than a particular cereal taxon. This would explain firstly the close association with barley (and the apparent ease with which these two can be delivered in exact ratios, cf. KTT 120), secondly the increased value attributed to it in meals (since food produced from more thoroughly cleaned or dehusked grains would involve less impurities and husk fragments), and thirdly its quantitatively speaking rather common appearance within an agricultural horizon that should be almost completely dominated by barley.

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